

What is claimed is:

1. A process gas line for a gas panel assembly for handling a plurality of process gases, comprising:

5 a process gas inlet for receiving process gas from a process gas source;

a one-piece manifold having at least one laterally-extending manifold face and having a manifold inlet in communication with the gas inlet to receive the process gas, the one-piece manifold having an internal gas pathway 10 for carrying the process gas generally in a lateral direction from the manifold inlet to a manifold outlet, the manifold having a plurality of device connection ports along the manifold face in communication with the internal gas pathway for mounting devices extending from the 15 manifold face and in gas flow communication with the connection ports; and

a process gas outlet connected to the manifold outlet.

2. A gas panel for handling plural process gases, comprising:

20 a plurality of one-piece manifold bodies, each of said manifold bodies having thereon at least three identical component receiving stations, each of said component receiving stations having a gas inlet and a gas outlet, the gas outlet from a first component receiving station of the 25 plurality being connected by a permanent connection within the manifold to a gas inlet to a neighboring component receiving station;

a plurality of gas components, each of said gas components being connected to a respective receiving 30 station on one of the manifold blocks, said gas components comprising at least one valve and at least one mass flow controller.

3. A gas panel according to claim 2, wherein one of said gas components comprises a purifier.

4. A gas panel according to claim 2, wherein one of said gas components comprises a filter.

5. A gas panel according to claim 2, wherein one of said gas components comprises a pressure transducer.

5 6. A gas panel according to claim 2, wherein said valve comprises a pneumatic valve.

7. A gas panel according to claim 2, wherein said valve comprises a manual valve.

8. A gas panel according to claim 2, wherein one of 10 said gas components comprises a pressure regulator.

9. A gas panel comprising:

a plurality of one-piece manifold bodies, each of said manifold bodies having thereon at least three identical component receiving stations, each of said component receiving stations having a gas inlet and a gas outlet, the gas outlet from a first component receiving station of the plurality being connected by a permanent connection with the manifold to a gas inlet to a neighboring component receiving station;

20 a gas shut-off valve connected to one of the receiving stations on one of the manifold blocks; and

a mass flow controller connected to receive gas from the gas shut-off valve.

10. A gas panel according to claim 9, further 25 comprising a purifier connected to one of said one-piece manifold bodies.

11. A gas panel according to claim 9, further comprising a filter connected to one of said one-piece manifolds.

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12. A gas panel according to claim 9, further comprising a pressure transducer connected to one of said one-piece manifolds.

13. A gas panel according to claim 9, further 5 comprising a pressure regulator connected to one of said one-piece manifolds.

14. A gas panel enclosure comprising:

a floor;

10 each of said upwardly extending rods being adjustable with respect to said floor; and

15 a one-piece gas panel manifold positioned on the rods for adjustment with respect to said floor, said gas panel manifold having a plurality of active device receiving stations thereon so that the active device portions of the upper surface of the manifold may be aligned in a plane with other manifolds positioned within the gas panel.

15. A gas panel comprising:

a plurality of gas inlets;

20 a one-piece gas panel manifold connected to each inlet of each of said plurality of said gas inlets, each of said one-piece gas panel manifolds defining a substantially transverse gas path therethrough and having a plurality of active device stations positioned across a top face 25 thereof;

30 a plurality of removable active devices removably connected to each of the active device stations for receiving said gas, each of said removable active devices being connected by a single device connector to couple both to inlet and outlet ports of the active device station; and

a plurality of gas outlets connected to the one-piece manifolds.

16. A gas panel according to claim 15, wherein said removable active devices further comprise: a shutoff valve, a pressure regulator and a mass flow controller.

17. A gas panel according to claim 16, wherein said 5 removable active devices further comprise a manual shut-off valve.

18. A gas panel according to claim 15, wherein an interface region between the manifold and the active devices is substantially planar and substantially parallel 10 to the flow of gas from the inlet of the manifold to the outlet of the manifold.

19. A flange for coupling to an active-site of a one-piece manifold, comprising:

a seal;

15 a base, said base having a retainer for coupling the seal in registration with the base, the base having a pair of gas ports comprising a gas inlet for receiving gas from an inlet bore of the one-piece manifold and a gas outlet for supplying the gas to an outlet bore of the one-piece 20 manifold; and

a fastener retained with the base for coupling with the one-piece manifold when the base is assembled with the one-piece manifold.

20. A preassembled active device for use in a gas 25 panel comprising:

a base;

a keeper mounted on the base;

a seal held by the keeper;

30 a fastener retained with the base and extending through the base for connection to a manifold of a gas panel; and

a retainer for holding the fastener to the base prior to assembly of the base with the manifold.

21. A one-piece manifold for a gas panel assembly for handling a gas, comprising: a one-piece manifold body having at least one laterally-extending manifold face and having a manifold inlet for receiving a gas, the one-piece 5 manifold body having an internal gas pathway for carrying the process gas generally in a lateral direction from the manifold inlet to a manifold outlet, the manifold having a plurality of device connection ports along the manifold face in communication with the internal gas pathway for 10 mounting devices extending from the manifold face and in gas flow communication with the connection ports, and a gas outlet in gas communication with the internal gas pathway for delivering the process gas to a tool.

22. A one-piece manifold for a gas panel assembly for 15 handling a gas according to claim 21, wherein the internal gas pathway comprises pairs of angularly formed bores defining v-paths between the device connection ports for carrying the gas from one device connection port to the next device connection port.

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